CLAIMS:

1.   An apparatus (100,210) that transmits data (320,330) in a video signal by modulating a brightness level (310) of said video signal.

2.   An apparatus (100,210) as claimed in Claim 1 wherein said apparatus modulates said brightness level (310) of said video signal during a data transmission period between two row refreshing periods of said video signal.

3.   An apparatus (100,210) as claimed in Claim 1 wherein said apparatus comprises:

a video display unit that is capable of encoding said data (320,330) into said brightness level (310) of said video signal to create brightness modulated video images (200); and

a brightness modulated data receiver unit (210) that is capable of receiving said brightness modulated video images (200) and decoding said data (320,330) from said brightness modulated video images (200).

4.   An apparatus (100,210) as claimed in Claim 3 wherein said video display unit comprises a brightness level modulating panel (120) that is capable of modulating said brightness level (310) of said video signal to encode said data (320,330) into said brightness level (310) of said video signal.

5.   An apparatus (100,210) as claimed in Claim 3 wherein said brightness modulated data receiver unit (210) comprises:

an optical receiver (220) that is capable of receiving said brightness modulated video images (200) from said video display unit (100) and detecting changes in said brightness level (310) of said video signal that represent said data (320,330) that is encoded into said brightness level(310) of said video signal; and

a brightness modulated data processor unit (230) that is capable of decoding said data (320,330) from said brightness modulated video images that are detected by said optical receiver (220).

6.   An apparatus (100,210) as claimed in Claim 5 wherein said brightness modulated data processor unit (230) decodes said data (320,330) from said brightness modulated video images (200) to recreate one of: an audio output, a text output, and a video output.

7.   An apparatus (100,210) as claimed in Claim 3 wherein said brightness level modulating panel (120) modulates said brightness level (310) of said video signal to encode at least one bit (320) of said data (320,330) into said brightness level (310) of said video signal in a data transmission period between two row refreshing periods of said video signal.

8.   An apparatus (100,210) as claimed in Claim 7 wherein said brightness level modulating panel (120) modulates said brightness level (310) of said video signal using one of: bi-phase amplitude modulation and asymmetric bi-phase amplitude modulation.

9.   An apparatus (100,210) as claimed in Claim 3 wherein said data that said video display unit (100) encodes into said brightness level (310) of said video signal to create brightness modulated video images (200) comprises at least one foreign language audio program; and

wherein said data that said brightness modulated data receiver unit (210) receives and decodes from said brightness modulated video images (200) comprises said at least one foreign language audio program.

10.   An apparatus (100,210) as claimed in Claim 3 wherein said data that said video display unit (100) encodes into said brightness level (310) of said video signal to create brightness modulated video images (200) comprises an audio program for a video program for which said audio program is not audibly transmitted; and

wherein said data that said brightness modulated data receiver unit (210) receives and decodes from said brightness modulated video images (200) comprises said audio program for said video program for which said audio program is not audibly transmitted.

11.   A method for transmitting data (320,330) in a video signal, said method comprising the step of modulating a brightness level (310) of said video signal.

12.   The method as claimed in Claim 11 further comprising the step of:
modulating said brightness level (310) of said video signal during a data transmission period between two row refreshing periods of said video signal.

13.   The method as claimed in Claim 11 further comprising the steps of:
encoding said data (320,330) into said brightness level (310) of said video signal in a video display unit (100) to create brightness modulated video images (200);
receiving said brightness modulated video images (200) in a brightness modulated data receiver unit (210); and
decoding said data (320,330) from said brightness modulated video images (200).

14.   The method as claimed in Claim 13 further comprising the step of:
modulating said brightness level (310) of said video signal in a brightness level modulating panel (120) of said video display unit (100) to encode said data (320,330) into said brightness level (310) of said video signal.

15.   The method as claimed in Claim 13 further comprising the steps of:
receiving said brightness modulated video images (200) from said video display unit (100) in an optical receiver (220);
detecting in said optical receiver (220) changes in said brightness level (310) of said video signal that represent said data (320,330) that is encoded into said brightness level (310) of said video signal; and
decoding in a brightness modulated data processor unit (230) said data from said brightness modulated video images (200)that are detected by said optical receiver (220).

16.   The method as claimed in Claim 15 further comprising the step of:
decoding said data (320,330) from said brightness modulated video images (200) to recreate one of: an audio output, a text output, and a video output.

17. The method as claimed in Claim 13 further comprising the step of:

modulating said brightness level (310) of said video signal to encode at least one bit (320) of said data (320,330) into said brightness level (310) of said video signal in a data transmission period between two row refreshing periods of said video signal.

18. The method as claimed in Claim 17 further comprising the step of:

modulating said brightness level (310) of said video signal using one of: bi-phase amplitude modulation and asymmetric bi-phase amplitude modulation.

19. The method as claimed in Claim 13 further comprising the steps of:

encoding data (320,330) that comprises at least one foreign language audio program into said brightness level (310) of said video signal to create brightness modulated video images (200);

receiving said brightness modulated video images (200); and

decoding from said brightness modulated video images (200) said data that comprises said at least one foreign language audio program.

20. The method as claimed in Claim 13 further comprising the steps of:

encoding data (320,330) that comprises an audio program for a video program for which said audio program is not audibly transmitted into said brightness level (310) of said video signal to create brightness modulated video images (200);

receiving said brightness modulated video images (200); and

decoding from said brightness modulated video images (200) said data (320,330) that comprises said audio program for said video program for which said audio program is not audibly transmitted.

21.   An encoded video signal (310) generated by a method for transmitting data (320,330) in a video signal, said method comprising the step of modulating a brightness level (310) of said video signal.

22.   An encoded video signal (310) as claimed in Claim 21 wherein said method further comprises the step of:

modulating said brightness level (310) of said video signal during a data transmission period between two row refreshing periods of said video signal.

23.   An encoded video signal (310) as claimed in Claim 21 wherein said method further comprises the steps of:

encoding said data (320,330) into said brightness level (310) of said video signal in a video display unit (100) to create brightness modulated video images (200);

receiving said brightness modulated video images (200) in a brightness modulated data receiver unit (210); and

decoding said data (320,330) from said brightness modulated video images (200).

24.   An encoded video signal (310) as claimed in Claim 23 wherein said method further comprises the step of:

modulating said brightness level (310) of said video signal in a brightness level modulating panel (120) of said video display unit (100) to encode said data (320, 330) into said brightness level (310) of said video signal.

25.   An encoded video signal (310) as claimed in Claim 23 wherein said method further comprises the steps of:

receiving said brightness modulated video images (200) from said video display unit (100) in an optical receiver (220);

detecting in said optical receiver (220) changes in said brightness level (310) of said video signal that represent said data 320,330) that is encoded into said brightness level (310) of said video signal; and

decoding in a brightness modulated data processor unit (230) said data (320,330) from said brightness modulated video images that are detected by said optical receiver.

26.   An encoded video signal as claimed in Claim 25 wherein said method further comprises the step of:

decoding said data from said brightness modulated video images to recreate one of: an audio output, a text output, and a video output.

27.   An encoded video signal as claimed in Claim 23 wherein said method further comprises the step of:

modulating said brightness level of said video signal to encode at least one bit of said data into said brightness level of said video signal in a data transmission period between two row refreshing periods of said video signal.

28.   An encoded video signal as claimed in Claim 27 wherein said method further comprises the step of:

modulating said brightness level of said video signal using one of: bi-phase amplitude modulation and asymmetric bi-phase amplitude modulation.

29.   An encoded video signal as claimed in Claim 23 wherein said method further comprises the steps of:

encoding data that comprises at least one foreign language audio program into said brightness level of said video signal to create brightness modulated video images;

receiving said brightness modulated video images; and

decoding from said brightness modulated video images said data that comprises said at least one foreign language audio program.

30.   An encoded video signal as claimed in Claim 23 wherein said method further comprises the steps of:

encoding data that comprises an audio program for a video program for which said audio program is not audibly transmitted into said brightness level of said video signal to create brightness modulated video images;

receiving said brightness modulated video images; and

decoding from said brightness modulated video images said data that comprises said audio program for said video program for which said audio program is not audibly transmitted.